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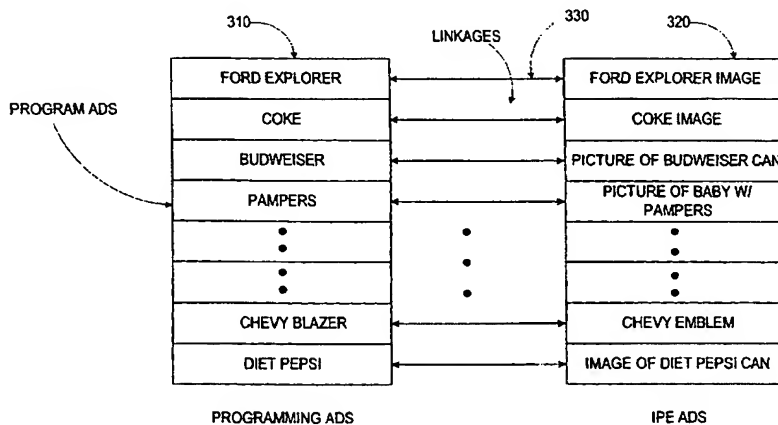
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(54) Title: **TARGETING ADS IN IPGS, LIVE PROGRAMMING AND RECORDED PROGRAMMING, AND COORDINATING THE ADS THEREBETWEEN**



PROGRAMMING AND IPE AD QUEUES SHOWINGS LINKAGE BETWEEN THE TWO FOR CORRELATED STB INSERTION AND PRESENTATION

(57) Abstract: Targeting ads to subscribers by comparing subscriber profiles with ad profiles. The system can be implemented on any delivery platform (i.e., SDV, HFC, DBS). The ads may be displayed to the subscriber within an IPG, within available in programming, or both. The targeting of ads in the two media can include linkages (330), IPG ads (320) in IPG prior to or after programming ads (310) for highly effective advertising campaigns. An ad queue may be used to determine the order in which ads are placed in the IPG, programming, or both. The ads and the ad queue may be stored upstream (i.e., HE or CO), at the subscriber side (i.e., STB), or some combination thereof. The ads may be substituted at the HE/CO of the STB. The STB may receive the targeted ads with the programming and/or IPG, on an ad channel, or via the Internet. The ads may be delivered to individual subscribers (i.e., STB) or to groups or subscribers (i.e., node).

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## TITLE

*Targeting Ads in IPGs, Live Programming and Recorded Programming, and Coordinating the Ads Therebetween*

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**Background of the Invention**

Television (TV) advertising is a major component in assisting manufacturers, distributors, vendors, and other organizations interested in publicizing their product, brand, service, or viewpoint, in reaching segments of the public. Moreover, TV advertising during TV programs (programming ads) subsidizes the cost of a large part of TV programming delivered to consumers. Advertisers commonly wish to deliver (target) certain programming ads to one or more groups of subscribers, such groups having particular demographic characteristics, such as income, age, gender, etc. These advertisers typically have access to market and demographic studies that allow them limited control over delivering their ads to specific groups of subscribers. One such method is "linked sponsorship", well known and used in the advertising industry. Linked sponsorship involves determining what demographic group or groups watch particular programming (e.g., from Nielsen data), and then buying (or contracting for) commercial spots during those programs for which the demographic viewership matches the desires of the advertiser. Improvements over the linked sponsorship model have been developed which allow advertisers to target their ads to the appropriate viewers or groups of viewers more efficiently. Such systems are disclosed in applicants co-pending U.S. application numbers 09/591,577 filed on June 9, 2000 entitled "Privacy-Protected Advertising System", 09/268,579 filed on March 12, 1999 entitled "Consumer Profiling System", 09/268,526 filed on March 12, 1999 entitled "Advertising Selection System Supporting Discretionary Target Market Characteristics", and 09/553,637 filed on April 20, 2000 entitled "Advertising Management System for Digital Video Streams". All of these applications are hereby incorporated by reference herein. These systems provide for the collection and processing of consumer and subscriber data in order to develop a profile for a subscriber or group of subscribers. These profiles, along with ad characterizations and other advertiser requirements, are used to match and deliver "targeted" ads to subscribers such that subscribers receive ads more appropriate for them (i.e., of more interest and hence more effective). Delivery of the targeted ads to appropriate subscribers/viewers can be accomplished in a variety of ways, as described in the aforementioned applications, including both upstream ad insertion (e.g., at a cable head-end or telco central office) and local ad

insertion (e.g., ad storage and insertion at a subscriber's set-top box (STB)). These targeted advertising systems provide advertisers with the means to target and reach subscribers of interest to them more effectively. In the advertising systems mentioned above, delivery to the subscriber of targeted or program independent advertising is accomplished while the subscriber is viewing a particular program. Targeted ads can be delivered with particular programming or they can be inserted at the STB and presented to the subscriber independent of the programming being viewed. When used herein, the terms "programming ads" and "telecast ads" refer to conventional television advertisements (i.e., video ads played during conventional programming such as a 30 second spot for a FORD Explorer™ played during a commercial "break" in prime time programming).

Another means and medium for delivering advertisements to TV viewers is via Electronic Program Guides (EPG) or Interactive Program Guides (IPG). EPGs and IPGs are well known in the art as interactive tools that provide television programming information to viewers. Typically, an IPG (or EPG) display includes a menu of programs and allows the viewer to select desired broadcast channels. Normally, the selection is accomplished by the viewer's highlighting of the desired option with a remote control device. The IPG (or EPG) is typically implemented in software that runs on a STB connected between a TV and a cable system home entry line. When scrolling to a new column or row, the IPG inserts the appropriate programming information into each new row or column. This information is either cached at the STB, or requested from the cable system's head-end. Examples of such EPG interfaces are disclosed in U.S. Patent 5,479,268 by *Young, et al.* and U.S. Patent 5,880,768 by *Lemmons, et al.*

IPGs may also contain advertising, and typically do so by using space in one portion of the screen to display a static advertisement. These advertisements are generally pre-programmed and the same advertisements are displayed to all the subscribers (viewers). Displaying advertisements in the IPG is disclosed in International Publication WO9827723A1 by *Yuen et al.* Often, the vast majority of the viewers of the advertisement deems the advertisement irrelevant and ignore it. Methods and systems for delivering more suitable and targeted ads in the IPG, based on subscriber/viewer profiles and/or demographics and the like have been described in detail in Applicant's co-pending U.S. application number 09/658,204 filed on September 8, 2000 and U.S. Provisional application number 60/238,056 filed on October 5, 2000, and have also recently been mentioned by *Yuen et al.* in International Publication WO049801A1.

Although these systems do provide for delivering targeted ads to viewers via the IPG, the IPG ads remain independent of conventional programming ads and are not linked to the programming ads in any way. This lack of linking or correlation between IPG ads and programming ads ignore the vast potential of increasing advertisement effectiveness by linking these two forms of ads, and thereby providing customized and enhanced ad opportunities for the advertiser to reach the subscriber without "saturating" the viewer with the same programming ad and causing the viewer to "tune out" the repeated ad.

For the foregoing reasons, there is a need for a method and system by which advertisements presented or displayed in the IPG are linked or correlated with conventional programming ads such that ad effectiveness and advertiser reach are enhanced and whereby advertisers have a greater variety of ways to customize their ad and ad campaigns presented to the subscriber/viewer in both programming and IPG contexts, and which provides for a means for viewer interaction and feedback regarding the ads. Moreover, there is a specific need for linking and correlating targeted advertising in the IPG with targeted advertising during programming.

For example, an ad in the IPG, when seen by the viewer, followed by a similar or related ad played during programming watched by the viewer may enhance the attentiveness of the viewer during the programming ad as well as increase the viewer's retention (i.e., memory) of the ad without causing the viewer to tune-out the ad. An ad in the IPG which is correlated with and which follows a programming ad may afford the viewer a means to interact with or request more information about the advertised product or service.

### Summary of the Invention

The present invention comprises a method and system whereby conventional television advertisements (i.e., those delivered to viewers while they watch television programming) can be delivered in conjunction with and correlated with advertisements that are presented to viewers in an Interactive Program Guide (IPG) or Electronic Program Guide (EPG). Moreover, the invention described herein provides for delivering highly targeted ads to viewers in both conventional programming avails and in the IPG, and for linking the targeted ads in these two medias to provide for enhanced and highly effective advertising campaigns. According to one aspect of the invention, both programming ads and IPG ads, targeted to specific subscribers or groups of subscribers, are temporally linked and scheduled to be presented to the appropriate target group in a variety of sequences that may enhance the

effectiveness of an advertising campaign by providing the subscriber with greater exposure to an advertised product while avoiding saturation by foregoing annoying repetitions of programming ads, and by providing mechanisms for the viewer to access or request more information, via the IPG, about a product or service advertised. Such linking and scheduling of correlated programming ads and IPG ads can be accomplished in conventional systems that provide for programming ad substitution upstream from the subscriber (e.g., at the head-end) as well as in systems that insert ads locally (e.g., at the subscriber's set-top box (STB)).

In one embodiment, there is an IPG advertisement management system (AMS) which is separate from but interfaces with a programming AMS. In another embodiment, the IPG AMS and programming AMS are integrated as one system.

In one embodiment one or more specific and targeted IPG ads are displayed in the IPG prior to the displaying of one or more specific targeted and related programming ad.

In another embodiment one or more specific and targeted IPG ads are displayed in the IPG subsequent to the displaying of one or more specific targeted and related programming ad.

In yet another embodiment one or more specific and targeted IPG ads are displayed in the IPG prior to and subsequent to the displaying of one or more specific targeted and related programming ad.

In one embodiment an IPG ad can be clicked on and this behavior by the viewer can be used to profile the viewer or to prioritize subsequent displaying of programming or IPG ads.

In another embodiment, an ad displayed in the IPG is an interactive ad, and can be accessed (e.g., clicked on) by the viewer for various purposes including, but not limited to, bookmarking the ad for later review, accessing a particular website via the Internet, requesting more information, requesting playing of a linked or correlated programming ad, for recording and measuring viewer interest in the advertised product or service, etc.

These and other features and objects of the present invention will be more fully understood from the following detailed description of the preferred embodiments, which should be read in light of the accompanying drawings.

### Brief Description of the Drawings

The accompanying drawings, which are incorporated in and form a part of the specification, illustrate the embodiments of the present invention and, together with the description serve to explain the principles of the invention.

In the drawings:

FIG. 1 illustrates a variety of network architectures on which both targeted programming ads and targeted IPG ads can be delivered to subscribers/viewers;

FIG. 2 illustrates an overall process by which an enhanced form of targeted advertising, linking the display of programming ads and correlated IPG ads, may be accomplished according to one embodiment of the present invention;

FIG. 3 shows a programming ad queue and a linked IPG ad queue, according to one embodiment of the invention;

FIG. 4 illustrates a process flow chart of how correlated or linked programming ads and IPG ads are presented to the viewer in a temporally linked sequence, according to one embodiment of the invention; and

FIG. 5 depicts a hypothetical sequence of programming and IPG ads, as seen by one or more viewers, according to one embodiment of the invention.

### **Detailed Description of the Preferred Embodiment**

In describing a preferred embodiment of the invention illustrated in the drawings, specific terminology will be used for the sake of clarity. However, the invention is not intended to be limited to the specific terms so selected, and it is to be understood that each specific term includes all technical equivalents which operate in a similar manner to accomplish a similar purpose.

When used herein the term "IPG" is meant to include and encompass all forms of electronic and interactive program guides as well as all types of content portals, which can be accessed and viewed by a subscriber/viewer (e.g., via a remote control), such content portals being used by the subscriber to navigate to the appropriate or desired content (e.g., TV programming, Internet, program guides, etc.). Furthermore, as will be evident to those of ordinary skill in the art, interactive program guide (IPG) advertisements (ads) can be in any format compatible with the IPG itself. These forms include, but are not limited to, conventional panel ads, static and non-static, HTML and XML based ads including dynamic applets, video and/or audio clips, streaming media, banner ads, etc.

FIG. 1 illustrates exemplary network architectures on which both targeted programming advertisements (ads) and targeted IPG ads can be delivered to subscribers (subs) including, but not limited to, Switched Digital Video (SDV) networks 110, hybrid fiber coax (HFC) cable networks 120, and direct broadcast satellite (DBS) systems 130. These systems are well known to those skilled in the art. The basic description of these systems can be found in Applicants co-pending PCT patent application number PCT/US01/27217 (Docket No. T721-10PCT) filed on August 31, 2001 entitled "Targeted Advertising at the Set Top Box".

According to a preferred embodiment of the current invention, an Ad Management System (AMS) 140 is responsible for selecting targeted ads for the subs by comparing characteristics of the ads to characteristics of the subs. The AMS 140 may also be responsible for grouping the subs and then matching the ads to the group of subs. The AMS 140 may also be responsible for traffic and billing associated with the delivery of the targeted ads. The AMS 140 may reside upstream at the head-end (HE) or central office (CO) 150 as illustrated, or may be a distributed system with elements residing upstream from the HE/CO 150 as well as downstream at a set-top-box (STB).

According to one embodiment, the targeted ads in the programming and the targeted ads in the IPG are linked in some fashion. To coordinate the placement of the targeted ads, a single integrated AMS may be used to manage both the programming ads and the IPG ads. Alternatively, a programming AMS and an IPG AMS may exist independently for managing programming ads and IPG ads respectively with an appropriate interface between the two AMSs for establishing linkages between the two types of ads and for correlating their respective schedules.

Targeted ads, both programming ads and IPG ads, can be delivered and presented to the viewer by ad substitution and insertion upstream (i.e., at the HE/CO 150) or by local ad insertion at the STB. Moreover, targeted programming ads may be inserted upstream whereas targeted IPG ads are inserted at the STB (or vice versa). In any case, specific programming ads and IPG ads may be linked such that they are displayed in an appropriate, temporally linked, sequence (e.g., the schedule and display of mutually linked programming and IPG ads are interdependent such that an IPG ad immediately precedes and/or follows a programming ad to which it is linked).

In order to select targeted ads it is necessary to have defined characteristics about the subscribers (subscriber profiles). As it is likely that more than one individual will watch a television, when used herein the term subscriber will be meant to include a single subscriber,



or a group of subscribers. The subscriber profiles can be simple or complex, can be obtained from a single source or multiple sources, can be generated internally, externally or a combination thereof.

5 According to one embodiment, the subscriber profiles may be generated internal to the current system. For example, the subscriber interactions with the television can be monitored. The monitored interactions include, but are not limited to, channel changes, volume changes, record commands, and EPG commands. If the TV was an interactive TV (connected to the Internet) the monitored interactions could include, but would not be limited to, surfing, clicks, and click throughs. The monitored interactions can be aggregated, summarized or generalized  
10 in order to generate viewing characteristics. The viewing characteristics can include, but are not limited to, most watched channels, channel change frequency, dwell time and average volume. According to one embodiment, the viewing characteristics can be based on time of day, day of week, or other appropriate time distinctions.

15 According to one embodiment, the monitored interactions can be filtered to exclude interactions that are likely not applicable. For example, when the subscriber is jumping or surfing channels there is probably no reason to record and or characterize the channels that were surfed and/or jumped. Thus, in one embodiment the system will be set up to ignore channels if they are not observed for a minimum time period (i.e., 1 minute) to eliminate channel jumping or surfing activities. Moreover, if the subscriber goes to bed and leaves the  
20 TV on there is probably no reason for recording the programming displayed to the TV while the subscriber is sleeping. Thus, in one embodiment the system will be set up to ignore material delivered if there is no interaction from the subscriber for a predetermined amount of time (i.e., 2 hours). It should be noted that these time limits could also be programmable (set by the subscriber, advertiser, network operator) or time variable.

25 The monitoring of subscriber interactions may be done local to the subscriber, such as a the set-top box (STB), may be done at the television delivery system (i.e., HE or CO), or some combination thereof. In an SDV system, the channel changes are actually processed by the SDV system so it may be easier to monitor the interactions at that point. In a cable network, it is preferable for the STB to capture the monitored subscriber interactions and  
30 either process the data internally or to transmit an aggregation of the raw interaction data to the HE for processing. Not transmitting the raw transaction data helps ensure the privacy of the subscriber is maintained.

According to one embodiment, program data associated with the material viewed or recorded, such as programming, advertisements, IPGs, and web sites, can be gathered in order to characterize the material. The program data may include, but is not limited to, classifications such as name of programs, genre of programs, type of product advertised, style of EPG, and content on web site. The program data may be obtained from closed captioned data, EPG data (i.e., category, subcategory), text associated with the material (i.e., HTML file), or from one of several commercial enterprises including TV Data of Glen Falls, NY. The program data can be used to enhance the viewing characteristics. Using the program data the viewing characteristics may include, but are not limited to, favorite genre, favorite type, favorite network, and favorite actor. The program data may be processed either at the STB, HE/CO or some combination thereof.

To account for the fact that it is likely that there are multiple subscribers watching the same television, in one embodiment multiple unique viewing characteristics are generated. The viewing characteristics may represent individual viewers or groups of viewers. Moreover, one subscriber may have multiple viewing characteristics associated therewith, depending on the time of day, or day of week. The different viewing characteristics are generated from the characteristics associated with different viewing sessions. The different sets of viewing characteristics are stored as viewing signatures that capture at least one and likely multiple viewing sessions. Each new viewing session is then compared to the viewing signatures and is either added to one of the viewing signatures or a new viewing signature is generated. When a subscriber starts interacting with the TV, the system determines which subscriber (defined by viewing characteristics) is using the system by monitoring the interactions and comparing the interactions to the different viewing signatures stored. In alternative embodiments, each subscriber could identify themselves as the ones interacting with the TV and the viewing characteristics being associated therewith.

According to one embodiment, the system may apply a set of heuristic rules to the viewing characteristics in order to generate a demographic profile or an interest profile of the subscriber. The heuristic rules can include both logical rules and rules expressed in terms of conditional probabilities. In a preferred embodiment, the heuristic rules are obtained from sociological or psychological studies and can be changed based on learning within the system or based on external studies that provide more accurate rules. Exemplary logical heuristics rules could include associating higher channel change frequency with males or the viewing of soap operas with females. Exemplary heuristic rules expressed in terms of conditional probabilities could include there being a 40% chance that a subscriber watching the news is

over 70. As one of ordinary skill in the art would recognize, there are numerous logical and probabilistic heuristic rules that can be used to realize the present invention. Moreover, the conditional probabilities associated with different characteristics may vary depending upon the time of day or other criteria.

5           The demographic profile could include the probabilities of the subscriber having certain demographic attributes including, but not limited to, age, gender, family size, income, race, ethnicity, and religion. The interest profile could include the probabilities associated with the subscriber having interests in certain products, services, and activities.

10           The monitoring of subscriber interactions, the generation of subscriber viewing characteristics, and the generation of demographic and interest profiles is further defined in the following of Applicant's co-pending applications, all of which are herein incorporated by reference in their entirety but are not admitted to be prior art:

- PCT Publication WO 00/33160 (Docket No. T702-00PCT) entitled "Subscriber Characterization and Advertisement Monitoring System";
- 15       • US application number 09/516,983 (Docket No. T702-02) filed on March 1, 2000 entitled "Subscriber Characterization with Filters";
- US application number 09/635,252 (Docket No. T702-04) filed on August 9, 2000 entitled "Subscriber Characterization based on Electronic Program Guide Data";
- 20       • US application number 09/516,314 (Docket No. T704-01) filed on March 1, 2000 entitled "Advertisement Monitoring and Feedback System";
- PCT Publication WO 00/33233 (Docket No. T705-01PCT) entitled "Subscriber Identification System";
- US application number 09/635,253 (Docket No. T705-02) filed on August 9, 25       2000 entitled "Subscriber Identification based on Electronic Program Guide Data";
- U.S. provisional application number 60/260,946 (Docket No. T734-00) filed on January 11, 2001 entitled "Viewer Profiling Within a Set-Top Box";
- U.S. provisional application number 60/263,095 (Docket No. T735-00) filed on 30       January 19, 2001 entitled "Session Based Profiling in a Television Viewing Environment"; and

- PCT application number PCT/US01/25261 (Docket No. T741-10PCT) filed on August 10, 2001 entitled "Targeting Ads to Subscribers Based on Privacy Protected Subscriber Profiles".

In addition to monitored viewing transactions, the subscriber profiles can be generated from external data including purchasing characteristics, transaction characteristics, statistical information and deterministic information. It will be apparent to one skilled in the art, that there are numerous sources for this data and that the data may be gathered from a single source or be an aggregate of numerous sources. According to one embodiment, a secure profiling server (SPS) will gather and process all the data in order to generate the subscriber profiles. As should be obvious to one of ordinary skill in the art, the SPS could generate various different profiles taking into account different data. The SPS is designed with protecting the privacy of subscribers in mind. In one embodiment, the subscribers would have to select "opt-in" to be profiled by the system. In another embodiment, raw transaction data would not be made available. In another embodiment, the identity of the subscriber is kept confidential. In another embodiment, the SPS is managed by a trusted third party, such as a non-profit organization.

According to one embodiment, the purchasing characteristics may be an aggregation of some subset of purchases including, but not limited to, point of sale, Internet, phone, and mail order. Subscribers may have their purchases tracked through the use of loyalty cards, credit cards, unique identifications, or other means that would be obvious to one of ordinary skill in the art. The characteristics likely provide an insight into characteristics associated with the subscribers (as purchasers). Heuristic rules may be applied to the purchasing characteristics in order to define demographic profiles or interest profiles of the purchasers. The monitoring of subscriber purchases, the generation of subscriber purchasing characteristics, and the generation of demographic and interest profiles is further defined in Applicant's PCT Publication WO 00/33228 (Docket No. T706-00PCT) entitled "Consumer Profiling and Advertisement Selection System", which is herein incorporated by reference in its entirety, but is not admitted to be prior art.

According to one embodiment, the transaction characteristics may be an aggregation of some subset of transactions including, but not limited to, credit card transactions, phone transactions, banking transactions and location transactions. The gathering of transactions and the generation of characteristics for the credit card transactions, the phone transactions, and the banking transactions would be obvious to one of ordinary skill in the art. The gathering of data related to location can be done using locating techniques associated with wireless devices

(such as personal digital assistants (PDAs) and phones). Location characteristics can be generated by aggregating and summarizing the location data. Heuristic rules may be applied to the location characteristics in order to define demographic profiles or interest profiles of the purchasers. The monitoring of subscriber locations, the generation of subscriber location characteristics, and the generation of demographic and interest profiles is further defined in Applicant's co-pending U.S. application number 09/782,962 (Docket No. L100-10), filed on February 14, 2001 entitled "Location Based Profiling", which is herein incorporated by reference in its entirety, but is not admitted to be prior art.

The statistical information may be in the form of logical characterizations of subscribers or probabilistic measures of likely characteristics of subscribers. The statistical information for the subscribers may be related to subscriber demographics, interests, psychographics, or other attributes that would be obvious to one of ordinary skill in the art. The statistical information may be based on market segments (i.e., groups of subscribers having similar characteristics). The statistical information may be collected from a variety of sources including private and public databases. For example, MicroVision, a product of Claritas, Inc. of San Diego, CA provides demographic segment statistical information for market segments defined by ZIP+4 (approx. 10-15 households).

The deterministic information contains known information about the subscriber, such as information the subscriber has provided. The deterministic information may be generated based on the results of a survey that the subscriber agrees to complete. An exemplary survey may ask questions relating to demographics (household size, ages, income, education), interests and the like. Other deterministic data may include data obtained from public or private databases, such as tax records, and real estate records.

According to one embodiment of the present invention, the subscriber profiles may be generated using Quantum Advertising™ to obtain a probabilistic representation of a subscribers interests in particular products and services. The basis for Quantum Advertising™ is derived from quantum mechanics where it is possible to have a probabilistic representation of a particle, but impossible to have a deterministic representation in which the precise position of the particle is known. Thus, Quantum Advertising™ allows advertisers to effectively target information to subscribers without revealing specific private information and thus not violating their privacy.

In accordance with the principles of Quantum Advertising™, the subscriber profile may be contained in a vector, such as a ket vector  $|A\rangle$ , where A represents the vector

describing an aspect of the subscriber. The ket vector  $|A\rangle$  can be described as the sum of components such that

$$\begin{aligned}
 |A\rangle = & (a_1\rho_1 + a_2\rho_2 + \dots a_n\rho_n) \\
 & + (b_1\sigma_1 + b_2\sigma_2 + \dots b_n\sigma_n) \\
 & + \dots \\
 & + (e_1\omega_1 + e_2\omega_2 + \dots e_n\omega_n)
 \end{aligned}$$

wherein  $a_1$  through  $e_n$  represent probability factors and  $\rho_1$  through  $\omega_n$  represent characteristics selected from at least a subset of viewing characteristics, purchase characteristics, transaction characteristics, demographic characteristics, socio-economic characteristics, housing characteristics, and consumption characteristics. Each characteristic may be defined by individual traits as well. For example, a demographic characteristic may include traits such as household size, income, and age.

Applicants co-pending U.S. application number 09/591,577 (Docket No. T702-03) filed on June 9, 2000 entitled "Privacy-Protected Advertising System" describes the concept of Quantum Advertising™ and the generation of subscriber profiles in the form of ket vectors  $|A\rangle$  in greater detail. This application is herein incorporated by reference in its entirety but is not admitted to be prior art.

In order to match ads to the subscriber profiles it is necessary to obtain information about the ads, for example characteristics about the intended target market of the ad. The ad characteristics may define demographic attributes (age, income), viewing attributes (favorite TV programs), and other interest attributes including, but not limited to, products, services, and activities. The ad characteristics would be provided by an advertiser or media buyer. There are numerous means by which the advertiser can define the ad characteristics for a particular ad including, but not limited to, (1) selecting appropriate attributes from a survey or pull down-menu (few or many attributes can be defined by the advertiser), (2) selecting a predefined set of characteristics, and (3) selecting characteristics associated with one or more subscribers or one or more groups of subscribers.

According to one embodiment of the current invention it may be beneficial to group subscribers together and deliver targeted ads to the various groups of subscribers. The subscribers may be grouped together in one of several ways. According to one embodiment, the subscribers can be grouped together based on how similar their characteristics (can be either simple or complex characteristics) are with each other. The grouping is performed by

correlating the appropriate characteristics of different subscribers and grouping those subscribers together that: met a predefined threshold, or have the most in common. According to one embodiment, clusters of subscribers may be grouped together based on how close the characteristics of the clusters are to each other. The clusters may be defined by elements of the delivery system, such as nodes in a cable television plant. The cluster characteristics are defined by averaging the characteristics of each of the subscribers that makes up the cluster. Each cluster is then correlated with each other cluster in the same manner described above for individual subscribers. According to one embodiment, the subscribers or clusters of subscribers are grouped together based on how well they correlate with ad characteristics. This embodiment requires that the characteristics for each subscriber or cluster of subscribers be compared to one or more ad characteristics and get grouped with the ad that: meets a predefined threshold, or has the most in common.

The generation of groups is discussed in further detail in Applications co-pending U.S. application number 09/635,542 (Docket No. T719-00) filed on August 10, 2000 entitled "Grouping Subscribers Based on Demographic Data" that is herein incorporated in its entirety but not admitted to be prior art.

Once the system has received and/or generated ad characteristics and subscriber profiles, the system can select targeted advertisements by correlating the two. The correlation may be based on few or many elements of the profiles/characteristics. In one embodiment, the elements may be weighted as to the importance of each to the advertiser. Once the targeted ads are selected a determination needs to be made as to when the targeted ad should be presented to the subscriber and in what media. That determination requires knowledge of the format of the ad, and the ad opportunities available (avails) within the IPG, the programming, or both.

The avail characteristics for typical avails within programming (i.e., 30 second commercial) are predefined and include such attributes as time, duration and bandwidth. Moreover, the expected target audience and the expected number of viewers of the programming that the avail is located in is likely known. Thus, the system can determine a match between an avail and an ad relatively simply. According to one embodiment, the ad characteristics may also be correlated with avail characteristics and a determination of what avail to place the ad in is based on the ad-avail correlation. Moreover, an impact value may be assigned by taking into account the predicted number of subscribers (targeted subscribers) who will be watching the program containing the avail. Thus, the final determination of what

avail to place what ad in for what subscribers can be based on a combination of the ad-subscriber correlation, the ad-avail correlation, and the impact value.

5 The avail characteristics for IPGs may be created by the AMS depending on desires of the advertiser and the subscriber profiles. The IPG avails may define any number of attributes that include, but are not limited to, the location of the avail (i.e., one or more ads located around the IPG grid), the size of the avail (i.e., 3 inch ads), and the type of ads (i.e., banner ads, video clips, audio ads). These attributes may be rigid or may be defined by a ranges where the advertiser can submit any ad that falls within that range. The advertiser may define attributes associated with the IPG that should be in place before an ad is placed (i.e., a particular screen of the IPG is opened, or that the IPG has been opened for a particular amount of time). The type of avails defined in the IPG may be dependent on the IPG provider and the network provider. The current invention is designed to match IPG ads with the IPG avails regardless of how complex or simple they are. As one of ordinary skill in the art would recognize, the matching of ads to IPG avails is much less defined than the matching of ads to programming avails. Thus, the final determination of what IPG ad to place in what avail for what subscribers can be based on a combination of the ad-subscriber correlation and the ad-avail correlation.

20 The targeted ads may be inserted in the programming via an ad insertion system (AIS) located at the HE/CO. The AIS may create a predetermined number of presentation streams (programming with targeted ads inserted in place of the default ads) and distribute the presentation streams to the subscribers. The number of presentation streams for each channel need not be the same for each channel, and need not be the same for each time duration. For example, Fox may have five presentation streams while ABC only has three, and Fox may have 5 during prime time but only two during day time programming. The determination of the number of presentation streams can be based on a number of factors including, but not limited to, advertisers wishing to place ads in that network or at that time and number of subscribers watching that network or at that time. Due to the limitation on bandwidth and not wanting to dilute the reach of advertisements, there is a limit to how many presentation streams would be generated for each channel (i.e., a maximum of 5).

30 Each of the presentation streams may be delivered to each subscriber (i.e., STB) or group of subscribers (i.e., node) with the STB or node making the determination as to which presentation stream (ad) was appropriate. As one skilled in the art would recognize, there are numerous methods for determining which presentation stream would be appropriate for which STB or node. For example, the presentation streams and the STBs or nodes could be



identified with specific designations and the presentation stream having a matching designation would be displayed. The designations could be preloaded in the STBs or nodes, could be downloaded to the STBs or nodes, or could be generated within the STBs or nodes based on the subscriber profile (or node profile) generated by the system. If transmitted to the STB or the node by the system, the transmission could be done within the delivery system by means well known to those skilled in the art. Additionally, the data could be transmitted via a separate Internet connection. One drawback to this embodiment, is the excess bandwidth that is used sending every subscriber all of the presentation streams.

According to one embodiment, the system will transmit the correct presentation stream to the correct subscribers (based on node or some other designation within the delivery network). The transmission of the different presentation streams to the different nodes can be done in numerous fashions that would be well within the scope of one skilled in the art.

According to one embodiment, the ad insertion is performed at the STB. In this embodiment, the STB receives at a minimum an ad schedule that defines an order for ad insertion and points to a location for where the ads can be found, an ad resource locator (ARL). The ads may be stored on the STB or may be stored upstream and downloaded to the STB when required. If the ads are stored upstream they may be downloaded in real time, or prior to the avail. For example, the ads may be delivered to the STB when the ad is within some predefined number of avails (i.e., 2) of being displayed. The ads may be received over the delivery system or may be received over a separate Internet connection.

If the ads are stored on the STB, the STB may receive only targeted ads or may receive a standard set of ads and store only those that are applicable to the STB (as defined by the subscriber profiles associated with the STB). The ads can be delivered via a dedicated ad channel or may be received via a separate Internet connection. The ad channel can be handled in numerous manners as would be obvious to those of ordinary skill in the art. If the STB receives only targeted ads then the system either has a separate ad channel; for each subscriber or each group of subscribers and only delivers the appropriate ad channel to the appropriate subscribers. If each STB receives standard ads and only stores the appropriate ads then a determination needs to be made at the STB as to whether the ad is appropriate. One method for determining appropriateness is to have the ads and the STB identified by some unique designator. If the designators matched the ad would be stored. An alternative embodiment, would be to send the ad profile with the ad, the STB could compare the ad profile to the subscriber profiles associated with the STB and save the ad if the correlation between the two met some predefined criteria.

The ad schedule can be as simple or complex as desired. The complexity depending of the network operator and the advertisers. The ad schedule may simply be a listing of the order that ads should be played. Alternatively, the ad schedule can be variable depending on what subscribers are determined to be watching the television, what programs are being watched, the time of day or day of week, or other factors that would be obvious to one of ordinary skill in the art.

If the ads are stored in the STB, it is also possible for the system to insert targeted advertisements into the recorded programming. The ads inserted into the programming may be according to the ad schedule. For ad schedules that take into account different subscribers, the ads may be selected from the schedule based on whom the system determines will watch the recorded program. The ads may be inserted into the recorded program as it is recorded or it may be inserted as the program is played back. If the program is being recorded at the same time that the program is being viewed the system may insert different targeted ads into the recorded version (either as it is being recorded or as it is played back).

The ads may be inserted in the IPG, by the IPG provider, at the HE/CO, or at the STB. If done by the IPG provider, the IPG provider may simply provide multiple versions of the IPG. If done by the HE/CO, the HE/CO will insert targeted ads into the IPG to create the multiple versions of the IPG. It should be noted that the different versions of the IPG may include the ads or may include links to ads that are transmitted separately. The multiple versions of the IPGs may be sent to each subscriber (STB) or group of subscribers (node), or in a preferred embodiment only the appropriate IPG will be sent to the appropriate subscribers. If all IPGs are sent to each subscriber, the subscriber may store only the appropriate IPG or may store all IPGs. The determination of the appropriate IPG is done in the same fashion as determining the appropriate presentation stream. The IPG is downloaded to the STB either over the delivery system or via the separate Internet connection. The IPG is downloaded via a download carousel that basically transmits an updated version of the IPG every time a change is made (i.e., every night the IPG may be updated to include an additional day of programming). The IPG may also be updated to include different targeted ads.

If the subscriber stores multiple versions of the IPG on the STB, it would be possible to switch between versions of the IPG when, for example, it was determined that a new subscriber having a different subscriber profile correlating to a different IPG was viewing the television.

As the interaction of the subscriber with the IPG can not be known in advance, any subscriber within a group of subscribers interacting with the IPG at a particular time will receive the same targeted ad regardless of the portion (i.e., screen) of the IPG they are interacting with or the number of times they have activated the IPG (i.e., whether it is the first or tenth time of the day).

In a preferred embodiment, the ads are inserted into the IPG at the STB. The ad schedule can be simple or complex. For example, a simple schedule may include nothing more than a list of ads to be displayed. The ads may all be of the same type (i.e., still images) or may be multiple types. A complex schedule may take into account time, program, or IPG screen being displayed in determining what ad is to be inserted next or to even define the next avail. For example, if a subscriber activates the IPG while watching a sporting event, ads associated with sporting goods may be moved to the top of the queue. If the subscriber is receiving additional information about a certain program (i.e., in a program screen) the IPG may insert audio ads.

The avails may be defined by time or by other parameters. For example, static ads (still images, sequence of still images) may be displayed for a certain time frame (i.e., 30 seconds). The amount of time the ad is displayed may be tracked. If the subscriber turns the IPG off before the allotted time the ad may be displayed again the next time the IPG is activated. There may be some parameters assigned to the tracking of time for the display of the ad. For example, if the ad is displayed for less than 2 seconds the time doesn't count, or if there is only two seconds left of display time when the subscriber logs off that the two seconds is lost. Interactive ads, such as video streams may be restricted to situations where it is apparent that the subscriber will be using the IPG for a minimum period of time, wherein the minimum period of time is defined as the length of the video ad. As one skilled in the art would recognize, there are multiple interactions of the scheduling of ads to be inserted in the IPG at the STB that would be well within the scope of the current invention.

The IPG ads may be stored at the STB or may be stored upstream and transmitted to the IPG in real-time, near real-time, or in advance of the avail. The IPG ads can be transmitted to the STB in the same manner as the programming ads (i.e., via the delivery system or via the Internet). Only targeted ads or all ads may be delivered to the STB. If all ads are delivered the STB will determine which ads to store in the same manner as done with the programming ads. The ads may have multiple forms that include, but are not limited to, still images, sets of interactive still images, video, audio, and streaming media. According to one embodiment, the

ad may be nothing more than a URL that is accessed via an separate Internet connection in the STB when that avail is activated.

To enhance the targeted advertising experience the system may coordinate the targeted advertising displayed to the subscriber in some combination of the IPG, the live programming and the recorded programming. It should be noted that coordinating the ads is most easily accomplished if the ads are inserted at the STB.

FIG. 2 illustrates an exemplary process by which an enhanced form of targeted advertising, linking the display of programming ads and correlated IPG ads, may be accomplished according to one embodiment of the present invention. Subscribers are characterized (step 210) and subscriber groups are formed (step 220) based on specific market segmentation criteria (e.g., entered by the advertiser or media buyer). Programming ads and IPG ads are also characterized (step 230) and linkages are established between specific programming ads and related IPG ads to form programming-IPG ad combinations (step 240). Such combinations may be one to one, one to many, or many to many. For instance, for a given programming ad there may be several IPG ads that are related to the programming ad and thus may be each be linked to the programming. Alternatively, there may be a single IPG ad that can be related to multiple programming ads.

The IPG-programming ad combinations are correlated with the subscriber groups (step 250). It should be noted that the IPG-programming ad combinations need not be formed prior to the correlating those combinations to subscriber groups. For example, the individual programming ads and IPG ads could be correlated to subscriber groups before forming the IPG-programming ad combinations. The combinations would then be formed after both types of ads have been independently correlated to the subscriber groups. IPG-programming ad combinations, which have been matched to particular subscriber groups, are then delivered and presented to these groups (step 260). The mechanisms for ad delivery and presentation include, but are not limited to, upstream ad substitution resulting in multiple presentation streams and/or ad insertion at the STB.

The linkage or correlation between programming ads and IPG ads could be very "tight" in the sense that the same product or service is advertised in both the programming and in the IPG, or could be relatively "loose" in that, for example, only ads for the same brand of product or category of product are linked between programming and the IPG. An example of a tight linkage would be a programming ad for a FORD Explorer™ to be followed, by an ad in the IPG, of a FORD Explorer™. An example of a loose linkage is that of a programming ad

for a particular Kraft™ cheese product followed by an IPG ad for Kraft in general, or a programming ad for Diet Coke™ followed by a panel ad for Coca Cola™ in the IPG.

Moreover, advertisers could “partner” to deliver effective correlated ads. For instance, a programming ad for Budweiser™ could be followed (or preceded) by an ad for Hanover™ pretzels in the IPG, or an ad for “travel to the Bahamas” could be followed by an IPG ad for a particular hotel, airline, travel agent, etc. As will be evident to those skilled in the art, a wide variety of programming and IPG ad combinations and campaigns are possible ranging from extremely tight correlations to extremely loose correlations. The degree of correlations between the programming and IPG ads can be chosen or set depending on a multitude of factors, including pricing and timing, and by a variety of participants including, but not limited to, the advertiser, the ad management system (AMS), and the subscriber.

FIG. 3 illustrates an exemplary group of programming ads 310 and a group of IPG ads 320 and the linkages 330 between them according to one embodiment of the invention. In this example, the linkages are one-to-one and the respective groups of ads are represented as ad queues, but it is to be understood that the number of linkages between particular programming ads and particular IPG ads, and the criteria for establishing such linkages, may be widely variable and dynamic and may depend on numerous factors including, but not limited to, advertiser preferences, ad formats, and scheduling constraints. As illustrated, the programming ad for FORD Explorer is linked to an IPG ad that is static image of a FORD Explorer. The programming ad for Pepsi™ is linked to an IPG ad consisting of an image of a Pepsi can. Both of these linkages are tight in that both the programming ad and the IPG ad advertise the same product. An IPG image of a FORD logo instead of the particular Explorer model, or an image of “beer pretzels” in the IPG preceding a programming ad for Budweiser would be examples of loose linkages.

In a preferred embodiment, all of the ads are stored locally at the STB (or other PVR device). In this scenario it is possible to correlate the schedule and the display of specific IPG ads to the display of specific programming ads in real-time and near-real time. Both programming and IPG ad queues can be created at the STB creating “virtual roadblocks” for both types of ads. That is, no matter what channel is being watched when an avail arrives in the programming, the next programming ad in the prioritized ad queue is inserted and displayed to the subscriber. Similarly, with the IPG ad queue, ads to be displayed next in the IPG can be ordered and prioritized according to a number of parameters. One parameter for ordering each queue is to establish a priority linkage between the two types of ads (programming and IPG) such that if, for example, a particular IPG ad is displayed, one or

more particular programming ads will be displayed soon or immediately thereafter in the programming avails. Conversely, if a particular programming ad is displayed, one or more particular IPG ads would be subsequently displayed when the IPG is invoked.

5 The storage of ads on the STB and the generation of ad queues (schedules) is disclosed in detail in the Applicants co-pending PCT application number PCT/US01/27217 (Docket No. T721-10PCT) filed on August 31, 2001 entitled "Targeting Advertising at the Set-Top Box" that is incorporated herein by reference but not admitted to be prior art. According to one embodiment, the prioritization of the ad queue is dynamic in that if, for example, the channel being viewed is changed or another viewer is identified, the order of programming ads to be  
10 displayed may be reordered to achieve effective targeting. In any case, at any given moment, there is always a schedule or prioritized queue of programming ads ready to be inserted and displayed. Using this schedule of programming ads, the IPG ad queue is generated such that the corresponding IPG ad or ads, linked to specific programming ads, are scheduled to be displayed in the IPG just prior to or just after the specific programming ad is displayed (if and  
15 when the IPG is invoked). The IPG ad queue may be dynamically reordered to be consistent with the programming ad queue.

FIG. 4 illustrates a process flow of how, according to one embodiment of the invention, correlated or linked programming ads and IPG ads are presented to the viewer in a temporally linked sequence. As will be evident to those skilled in the art, the process  
20 described below is but one example of how the presentation of programming ads and IPG ads could be linked, there being a multitude of other ways (including variations on the described process) to implement the desired ad linkages. Initially, depending on various parameters including what channel is being viewed and the identity of the viewer, an ad queue or schedule of programming ads is retrieved or generated (step 410). Once the programming ad queue is  
25 formed, a corresponding IPG ad queue is formed (step 420). The IPG ad queue prioritizes (i.e., schedules in display sequence) IPG ads based on their correlations (or lack thereof) with the programming ads in the programming ad queue. For instance, if the first three ads in the programming ad queue are for FORD, Coke, and Budweiser respectively, the initial ads in the IPG ad queue would be ads correlated to FORD, Coke, and Budweiser. There may be one or  
30 more IPG ads corresponding to a single programming ad, or the same IPG ad may be displayed one or more times before and after the programming ad as desired. For example, if a FORD ad is next in the programming ad queue, there may be two or more IPG FORD ads scheduled, such that an IPG FORD ad is displayed both prior to and subsequent to the programming FORD ad. Moreover, the IPG ad queue can be adjusted to insure that the IPG

ads related or linked to the programming ads are displayed during IPG invocations that occur near in time to the displayed programming ad.

If an event, such as a channel change or change in viewership (e.g., a new viewer) occurs (step 430), then the process returns to step 410 if the event is such that it affects the programming queue and requires the programming ad queue to be regenerated and optimized to account for the new program or viewer. When the programming ad queue is regenerated (step 410) the IPG ad queue is also regenerated (step 420) to maintain the appropriate temporal display sequence relationship of correlated programming ads and IPG ads. If the IPG is invoked (step 440) before the next programming avail, the appropriate IPG ad (i.e., next ad in the queue) is displayed (step 450). After the IPG is dismissed, a check is made as to whether or not a particular IPG ad has been saturated, such as repeated too often (step 460). If the threshold of saturation has not been reached then the IPG ad queue is updated (step 420). The IPG may need to be updated to remove a particular ad from the top of the queue if the viewer accessed the IPG many times prior to the occurrence of a programming avail. The IPG ad queue may be updated to place an entirely new ad or a different ad for the same advertiser (Ford ad vs. Ford Explorer ad) at the top of the queue. If the IPG ad queue has not reached saturation the process returns to step 430.

Upon dismissal of the IPG, a check is made for programming avails (step 465). If no avail is encountered the process returns to step 430. If an avail is encountered, the programming ad at the top of the current ad queue (i.e., most recently generated) is inserted and displayed in that avail (470). Then, the IPG ad queue is regenerated to take into account that the programming ad queue has changed (step 420). The regeneration of the IPG ad queue can result in a change to that queue or, alternatively, no change to the queue depending on the parameters of the queue scheduler. Subsequent invocation of the IPG following a programming ad will, in a preferred embodiment, result in the display of an IPG ad that was linked to the most recent programming ad. This is but one example of how related programming ads and IPG ads can be scheduled and rescheduled in ad queues, according to circumstantial and parametric changes, to provide for IPG ads to be presented to the viewer both immediately before and/or immediately after a correlated programming ad.

FIG. 5 depicts a hypothetical example sequence of programming and IPG ads, as seen by one or more viewers, according to one embodiment of the invention. The viewer is watching NBC's Tonight Show (510), and when the commercial break arrives (i.e., the programming avails) a targeted ad for FORD Explorer (520) is shown followed by a targeted ad for Coke™ (525), after which the Tonight Show programming resumes (510). Soon

thereafter the viewer invokes the IPG (530), and ads for FORD (532) and Coke (534), that are linked to the previous programming ads, are displayed in the IPG. The viewer then dismisses the IPG (536) and continues watching NBC, but soon after changes the channel (540) to watch ABC's Nightline™ (542). At this point the programming ad queue may or may not be  
5 updated depending on various factors such as whether or not the next ad in the queue will fit into the next upcoming avail of the current channel.

The viewer invokes the IPG (550) and IPG ads for Budweiser (552) and Chevrolet (554) are displayed in the IPG. These ads are displayed because, in this example, they are linked to the programming ads that are next in the programming ad queue, namely ads for  
10 Chevrolet and Budweiser. The IPG is dismissed (558) and the viewer resumes watching Nightline (542). When the next programming avails are encountered (560), the programming ads for Chevrolet (562) and for Budweiser (564) are displayed. Nightline (542) returns after the commercial break, and the viewer subsequently invokes the IPG (570), in which a related Budweiser (572) and another, in this case, unrelated ad (574) are displayed. Soon after the  
15 viewer dismisses the IPG and returns to programming, a change event is encountered (580) involving both a channel change (to the H&G channel) and viewership change. This event may signal the STB processor (or upstream processor) to recompute or use a different set of ad queues for inserting into upcoming programming avails and IPG screens (e.g., consistent with a new viewer profile). At the next commercial break (590), targeted ads for Pampers™ (592)  
20 and for Diet Pepsi™ (594) are presented to the viewer, and soon thereafter when the viewer invokes the IPG, ads for Diet Pepsi (596) and for Pampers (598) are displayed in the IPG.

Although the above example illustrates the general concept and a particular method for linking the display of related programming ads and IPG ads, it is important to note that this is only a simple example of the different combinations and sequences of correlated programming  
25 and IPG ads that can be displayed to one or more viewers. It should also be noted that although the IPG screens depicted in the Fig. 5 are the familiar grid format with panel ads, other types of IPG ads can also be displayed, as well as other IPG screens that provide additional or complementary means for displaying a wide variety of ads (e.g., the IPG information screen is a different format than that of the IPG guide screen and can  
30 accommodate ads of a differing format).

In an alternate embodiment, the IPG can also be used as a virtual roadblock, insuring that, if a viewer invokes or enters the IPG during a specific programming ad, the viewer is presented with an IPG ad that is linked to the particular programming ad. Thus, if a viewer invokes the IPG during a programming commercial break, the same (or similar) commercial or



linked IPG ad can be displayed in the IPG. For instance, if a viewer is presented a programming ad for FORD Explorer and immediately invokes the IPG, a related FORD ad (or for that matter a competitor's ad such as a Chevrolet ad) is displayed in the IPG. The IPG ad can be video, audio, a static or dynamic panel ad, or any other ad format compatible with the IPG. Moreover, with Picture-in-Picture (PIP) capability, the actual (or alternate) programming ad being displayed can be shown in the IPG while the viewer had the IPG invoked.

Although the programming ads and the IPG ads can be managed by separate ad management systems (AMS), according to one embodiment, the IPG AMS and programming AMS are integrated and the advertiser or media buyer purchases or contracts for one or more ad campaigns comprising one or more programming ads or one or more IPG ads. In a preferred embodiment, the contract "flight" is a sequence of correlated or linked programming ads and IPG ads. For example, Ford may wish to advertise their Explorer model and may wish to have an IPG ad precede and or follow a programming ad for the model, in which case FORD would contract for such a flight and the integrated programming and IPG ad AMS would generate a schedule and deliver both programming and IPG ads for display in a linked fashion.

Although the various embodiments described herein relate to the co-linking of targeted IPG ads with targeted programming ads, it is to be understood, that the linking of IPG and programming ads could be done in the absence of targeting. That is, correlated IPG and programming ads can be linked in an ad campaign, as described above, even if neither the IPG ad nor programming ad or both are targeted. For instance, a non-targeted programming ad for a FORD Explorer™ shown on NBC could be followed by a similar FORD ad presented in the IPG. Neither of these ads is targeted (i.e., linked to a subscriber profile or demographic), the method of advertising in this instance being the conventional "linked sponsorship" presentation model. An important innovative feature of the present invention is that related programming ads and IPG ads are linked and displayed in a sequence, relative to one another, to enhance the effectiveness of what is being advertised, and as will be evident to those skilled in the art, this can be accomplished in the absence of ad targeting. In this example, knowledge of which programming ad was viewed could be extracted (or inferred or statistically predicted) from the channel or program being watched and/or the AMS, and a subsequent IPG ad displayed (e.g., from a local IPG ad queue) which was correlated with the programming ad.

Moreover, and as described above, the correlation between IPG and programming ads could be quite "loose." For instance an IPG ad could be linked to one or categories of programming ads (e.g., cars, appliances, travel, finance, etc.). Knowledge of such categories

could be derived from sources, including but not limited to, an AMS or the category of programming (i.e., content) in which the ad is shown.

5 In addition to linking the ads in the programming and the IPG, ads inserted in recorded programming may also be linked to either the previous display of the IPG, the display of the last ad in live programming, or both. Additionally, the display of ads in the IPG and live programming may be linked to ads that were just displayed in the viewed recorded p[rogramming. As one skilled in the art would recognize, for the most efficient linking the ads should be inserted into the recorded programming as it is watched.

10 In addition to using the subscriber profiles to target advertisements in the IPG and programming, in one embodiment the subscriber profiles can be used to organize the IPG for the subscriber. For example, the IPG may organize the programming according to the programming interests of the subscriber as defined in the subscriber profile. In addition, the look of the IPG (colors, font, or other formatting) may also be modified to reflect the profile of the subscriber. If the system determines that a new subscriber (as defined by the subscriber  
15 profile) is viewing the television the IPG may be updated to reflect that subscribers profile.

It should be noted that the implementation of this system is platform independent. For example, if the system is implemented on analog cable network targeting of ads in the IPG and programming can be done to the node level. If the system was implemented on an SDV network, the targeting of ads could be done to the individual house through the use of multiple  
20 presentation streams. That is, in an SDV environment each house only receives the channels that it selects, so the bandwidth restraints of creating too many presentation streams per program stream is not applicable. In a particular manner, the network operator may not want to create that many different presentation streams. However, in an SDV environment it can be considered as each household has its own ad queue at the central office and that ads are  
25 inserted into any program stream based on the queue. In an SDV environment it is also possible for the central office to monitor subscriber interaction with the TV and generate the subscriber profiles there.

In a digital cable environment it is possible to deliver targeted ads to the nodes just like with an analog system. However, in both the SDV and digital environments it is also possible  
30 to substitute the ads at the household by using a STB. As previously discussed the ads are delivered to the STB and stored therein and are inserted at the appropriate time according to an ad schedule that is also resident at the STB.

Although this invention has been illustrated by reference to specific embodiments, it will be apparent to those of ordinary skill in the art that various changes and modifications may be made that clearly fall within the scope of the invention. The invention is intended to be protected broadly within the spirit and scope of the appended claims.

**Claims**

What is claimed:

1. A method for enhancing the effectiveness of advertising by linking the display of IPG ads with the display of programming ads, the method comprising:  
5 linking at least one IPG ad with at least one programming ad to form at least one IPG-programming ad combination; and  
displaying the IPG ad at least once in the IPG when the IPG is invoked immediately prior to or immediately subsequent to the display of the programming ad.
- 10 2. The method of claim 1, wherein at least one of the IPG ads or at least one of the programming ads is a targeted ad, thus forming a targeted IPG-programming ad combination.
3. The method of claim 2, wherein the targeted IPG-programming ad combination  
15 is assigned to at least one subscriber group, the subscriber group comprising at least one subscriber.
4. The method of claim 3, wherein the targeted IPG-programming ad combination  
is formed prior to the assignment of the combination to one or more subscriber groups.
- 20 5. The method of claim 3, wherein the targeted IPG-programming ad combination  
is formed subsequent to the assignment of at least one IPG ad or at least one programming ad to one or more subscriber groups.

6. The method of claim 1, wherein said displaying of the programming ad or the IPG ad is accomplished via programming ad or IPG ad substitution upstream from the subscriber premises.

5 7. The method of claim 1, wherein said displaying of the programming ad or the IPG ad is accomplished via programming ad or IPG ad substitution at the subscriber premises.

8. The method of claim 7, wherein said ad substitution is accomplished via a local queue of ads resident on a subscriber receiver or set-top box.

10 9. The method of claim 1, wherein the IPG ad is an interactive ad.

10. The method of claim 9, wherein the interactive IPG ad allows a viewer to request additional information regarding a particular linked programming ad or IPG ad including  
15 directly accessing a website via the IPG ad.

11. The method of claim 9, wherein a viewer interaction with said IPG ad causes a related linked programming ad to be subsequently displayed.

20 12. The method of claim 1, wherein the IPG ad is displayed in the IPG when the IPG is invoked during the presentation of one of the programming ads.

13. A method for managing the scheduling, delivery and presentation, to television viewers, of both programming ads and IPG ads, and for linking the display of such ads to enhance the effectiveness of ad campaigns comprising:

linking at least one IPG ad with at least one programming ad to form at least one IPG-programming ad combination; and

generating a presentation schedule of said IPG programming ad combination such that the display of at least one IPG ad member of said combination is presented in the IPG, when the IPG is invoked, immediately prior to or immediately subsequent to the display of at least one programming ad member of said combination.

14. The method of claim 13, further comprising delivering and displaying said IPG-programming ad combinations to at least one subscriber in accordance with said presentation schedule.

15. The method of claim 13, further comprising:  
forming at least one subscriber group comprising at least one subscriber; and  
assigning at least one of said IPG-programming ad combinations to said group.

16. The method of claim 13, wherein said generating of presentation schedules may be dynamic and said schedules may be updated in real-time in response to channel changes, viewership changes or other events.

17. The method of claim 13, wherein said schedule is created upstream from the subscriber's premises.

18. The method of claim 13, wherein said schedule is created at the subscriber's  
5 premises.

19. An advertisement management system (AMS) for managing the scheduling, delivery and presentation, to television viewers, of both programming ads and IPG ads, and for linking the display of said ads to enhance the effectiveness of advertising campaigns  
10 comprising:

a linking module for linking at least one IPG ad to at least one programming ad forming an IPG-programming ad combination; and

a display module for coordinating the display of said linked IPG ad and programming ad in a temporally linked fashion.

15

20. The system of claim 19, further comprising:

a scheduling module for generating one or more schedules for the coordinated display of said linked IPG and programming ads and wherein said display of the linked ads proceeds according to said schedule.

20

21. The system of claim 20, wherein at least one of said linking module, said scheduling module, and said display module is resident on a subscriber's receiver or set-top box.

22. The system of claim 20, wherein said scheduling module may create schedules in real-time in response to channel changes, viewership changes or other events.

5 23. The system of claim 19, wherein said AMS includes a programming AMS and an IPG AMS, wherein the programming AMS and the IPG AMS are independent of one another.

10 24. The system of claim 19, wherein said AMS is a single integrated system that manages both programming ads and IPG ads.

25. A method for enhancing the effectiveness of advertising by linking the display of IPG ads with the display of programming ads comprising:  
linking at least one IPG ad with at least one programming ad; and  
15 displaying said IPG ad and said programming ad in a temporally linked fashion.

26. The method of claim 25, further comprising:  
generating at least one schedule that temporally links the display of at least one IPG ad with at least one programming ad and wherein said displaying of said IPG ad and said  
20 programming ad proceeds in accordance with said schedule.

27. The method of claim 26, wherein at least one of said IPG ad and said programming ad is a targeted ad.



**AMENDED CLAIMS**

[received by the International Bureau on 10 January 2002 (10.01.02);  
new claims 28-74 added; remaining claims unchanged (12 pages)]

28. A method for coordinating display of programming advertisements with display of other types of advertisements, the method comprising:

5 linking at least one of the programming advertisements to at least one of the other types of advertisements;

monitoring the display of the programming advertisements;

detecting availability of advertisement opportunities for the other types of advertisements;

10 determining when a linked other type of advertisement is available for the advertisement opportunity based on said linking, said monitoring and said detecting; and

displaying the linked other type of advertisement in the advertisement opportunity.

29. The method of claim 28, wherein the other types of advertisements are IPG  
15 advertisements.

30. The method of claim 29, wherein said detecting includes detecting activation of an IPG, the IPG having advertisement opportunities therein.

20 31. The method of claim 30, wherein said determining includes determining what programming advertisements were displayed prior to activation of the IPG.

32. The method of claim 31, wherein said determining further includes determining if there are any IPG advertisements linked to the programming advertisements displayed prior to activation of the IPG.

5 33. The method of claim 30, wherein said determining includes determining what programming advertisements are scheduled to be displayed when the IPG is activated.

34. The method of claim 33, wherein said determining further includes determining if there are any IPG advertisements linked to the programming advertisements  
10 scheduled to be displayed.

35. The method of claim 28, wherein said monitoring includes monitoring the programming advertisements that are scheduled to be displayed.

15 36. The method of claim 28, wherein said linking includes linking the programming advertisements for a particular product or service with the other types of advertisements for the particular product or service.

37. The method of claim 28, wherein said linking includes linking the  
20 programming advertisements for a particular companies product or service with the other types of advertisements for the particular company.

38. The method of claim 28, wherein said linking includes linking the programming advertisements for a particular company, product or service with the other types of advertisements for related companies, products or services.

5 39. The method of claim 28, wherein said linking includes linking the programming advertisements for a particular company, product or service with the other types of advertisements for competitive companies, products or services.

40. The method of claim 28, further comprising  
10 maintaining a first advertisement queue for the programming advertisements; and  
maintaining a second advertisement queue for the other types of advertisements,  
wherein the first and the second advertisement queues are linked together.

41. The method of claim 28, wherein said linking includes linking one to one,  
15 many to one, or one to many.

42. The method of claim 28, wherein the other type of advertisements are advertisements in recorded programming.

20 43. The method of claim 42, wherein said detecting includes detecting initiation of a record command and detecting the advertisement opportunities within programming being recorded.

44. The method of claim 43, wherein said linking includes linking the programming advertisements with the advertisements in recorded programming as the programming is being recorded.

5

45. The method of claim 43, wherein said linking includes linking the programming advertisements with the advertisements in recorded programming as the recorded programming is being played back.

10 46. The method of claim 28, wherein the other type of advertisements include IPG advertisements and advertisements in recorded programming.

47. The method of claim 46, wherein the advertisements in recorded programming is advertisements recorded in programming, advertisements displayed when  
15 recorded programming is played back, or both.

48. The method of claim 28, wherein at least some subset of the programming advertisements and the other types of advertisements are targeted advertisements.

20 49. The method of claim 48, wherein the targeted advertisements are targeted based on correlating intended target market traits with traits associated with at least some subset of node, cluster of nodes, household, group of households, subscribers, or group of subscribers.

50. A system for coordinating display of programming advertisements with display of other types of advertisements, the system comprising:

means for linking at least one of the programming advertisements to at least one of  
5 the other types of advertisements;

means for monitoring the display of the programming advertisements;

means for detecting availability of advertisement opportunities for the other types of advertisements;

means for determining when a linked other type of advertisement is available for the  
10 advertisement opportunity responsive to said means for linking, said means for monitoring and said means for detecting; and

means for displaying the linked other type of advertisement in the advertisement opportunity.

15 51. The system of claim 50, wherein said means for detecting detects IPG advertisement opportunities when an IPG is activated.

52. The system of claim 51, wherein said means for determining determines IPG advertisements linked to at least some subset of:

20 the programming advertisements displayed prior to activation of the IPG; and  
the programming advertisements scheduled to be displayed.

53. The system of claim 50, wherein said means for linking links at least some subset of:

the programming advertisements for a particular product or service with the other types of advertisements for the particular product or service;

5 the programming advertisements for a particular companies product or service with the other types of advertisements for the particular company;

the programming advertisements for a particular company, product or service with the other types of advertisements for related companies, products or services; and

10 the programming advertisements for a particular company, product or service with the other types of advertisements for competitive companies, products or services.

54. The system of claim 50, wherein said means for detecting detects advertisement opportunities within programming being recorded upon initiation of recording.

15 55. The system of claim 54, wherein said means for determining determines recorded advertisements linked to at least some subset of:

the programming advertisements displayed prior to activation of the recording; and

the programming advertisements scheduled to be displayed.

20 56. The system of claim 50, wherein said means for detecting detects advertisement opportunities within recorded programming being viewed upon initiation of playback of the recorded programming.

57. The system of claim 56, wherein said means for determining determines recorded advertisements linked to at least some subset of:

the programming advertisements displayed prior to activation of the playback; and

5 the programming advertisements scheduled to be displayed.

58. The system of claim 50, further comprising

means for selecting targeted advertisements; and

means for displaying the targeted advertisements.

10

59. A computer program embodied on a computer readable medium for coordinating display of programming advertisements with display of other types of advertisements, the computer program comprising:

15 a source code segment for linking at least one of the programming advertisements to at least one of the other types of advertisements;

a source code segment for monitoring the display of the programming advertisements;

a source code segment for detecting availability of advertisement opportunities for the other types of advertisements;

20 a source code segment for determining when a linked other type of advertisement is available for the advertisement opportunity responsive to said means for linking, said means for monitoring and said means for detecting; and

a source code segment for displaying the linked other type of advertisement in the advertisement opportunity.

60. A method for managing presentation of programming advertisements and other advertisements, the method comprising:

maintaining a first queue defining a sequence for display of the programming advertisements;

maintaining a second queue defining a sequence for display of the other advertisements, wherein at least one of the other advertisements defined in the second queue is linked to at least one of the programming advertisements defined in the first queue;

detecting programming advertisement opportunities;

displaying the programming advertisements in the programming advertisement opportunities in the sequence defined in the first queue;

detecting other advertisement opportunities; and

displaying the other advertisements in the programming advertisement opportunities in the sequence defined in the second queue.

61. The method of claim 60, wherein the first queue is updated based on a change to at least some subset of channel, viewership, program, genre, or time.



62. The method of claim 60, wherein the second queue is updated so that at least a subset of the other advertisements defined in the second queue are in sync with at least a subset of the programming advertisements defined in the first queue.

5 63. The method of claim 60, wherein the other advertisements are IPG advertisements.

64. The method of claim 63, wherein said detecting includes detecting initiation of an IPG and IPG advertisement opportunities available therein.

10

65. The method of claim 63, wherein the IPG advertisements displayed are linked to the programming advertisements that were just displayed or that are scheduled to be displayed in the near future.

15 66. The method of claim 60, wherein the other advertisements are advertisements in recorded programming.

67. The method of claim 66, wherein said detecting includes detecting recording advertisement opportunities available when programming is being recorded.

20

68. The method of claim 66, wherein said detecting includes detecting recording advertisement opportunities available when recorded programming is being played back.

69. The method of claim 60, wherein at least some subset of the programming advertisements and the other advertisements are targeted advertisements.

5           70. The method of claim 60, wherein the link between at least one of the other advertisements defined in the second queue and at least one of the programming advertisements defined in the first queue includes at least some subset of:

the programming advertisements for a particular product or service with the other types of advertisements for the particular product or service;

10           the programming advertisements for a particular companies product or service with the other types of advertisements for the particular company;

the programming advertisements for a particular company, product or service with the other types of advertisements for related companies, products or services; and

15           the programming advertisements for a particular company, product or service with the other types of advertisements for competitive companies, products or services.

71. A computer program embodied on a computer readable medium for managing presentation of programming advertisements and other advertisements, the computer program comprising:

20           a source code segment for maintaining a first queue defining a sequence for display of the programming advertisements;

a source code segment for maintaining a second queue defining a sequence for display of the other advertisements, wherein at least one of the other advertisements defined

in the second queue is linked to at least one of the programming advertisements defined in the first queue;

a source code segment for detecting programming advertisement opportunities;

5 a source code segment for displaying the programming advertisements in the programming advertisement opportunities in the sequence defined in the first queue;

a source code segment for detecting other advertisement opportunities; and

a source code segment for displaying the other advertisements in the programming advertisement opportunities in the sequence defined in the second queue.

10 72. The computer program of claim 71, wherein said source code segment for maintaining a first queue updates the first queue based on a change to at least some subset of channel, viewership, program, genre, or time.

15 73. The computer program of claim 71, wherein said source code segment for maintaining a second queue updates the second queue so that at least a subset of the other advertisements defined therein are in sync with at least a subset of the programming advertisements defined in the first queue.

20 74. A system for managing presentation of programming advertisements and other advertisements, the system comprising:

means for maintaining a first queue defining a sequence for display of the programming advertisements;

means for maintaining a second queue defining a sequence for display of the other advertisements, wherein at least one of the other advertisements defined in the second queue is linked to at least one of the programming advertisements defined in the first queue;

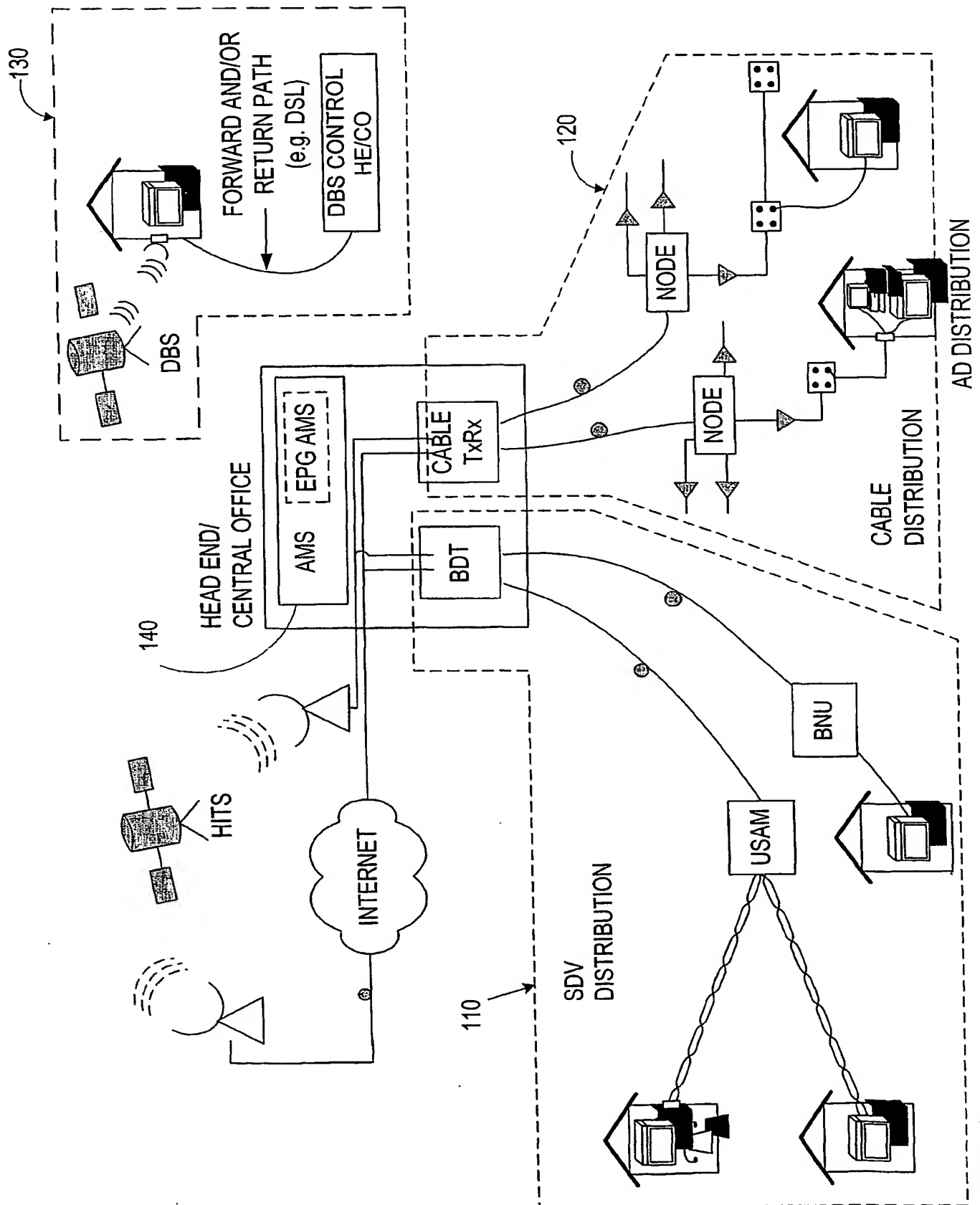
means for detecting programming advertisement opportunities;

5 means for displaying the programming advertisements in the programming advertisement opportunities in the sequence defined in the first queue;

means for detecting other advertisement opportunities; and

means for displaying the other advertisements in the programming advertisement opportunities in the sequence defined in the second queue.

10



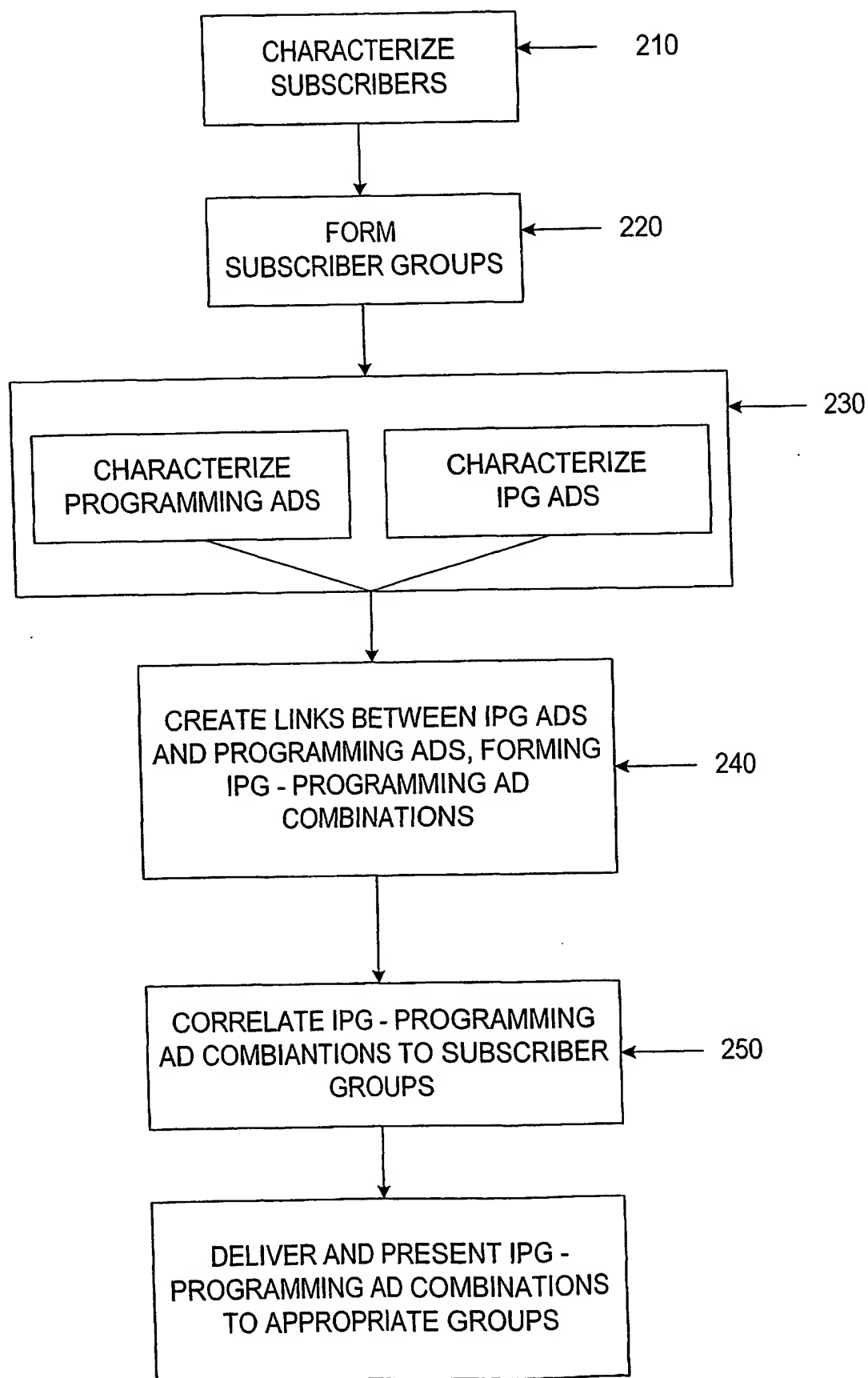


FIG. 2

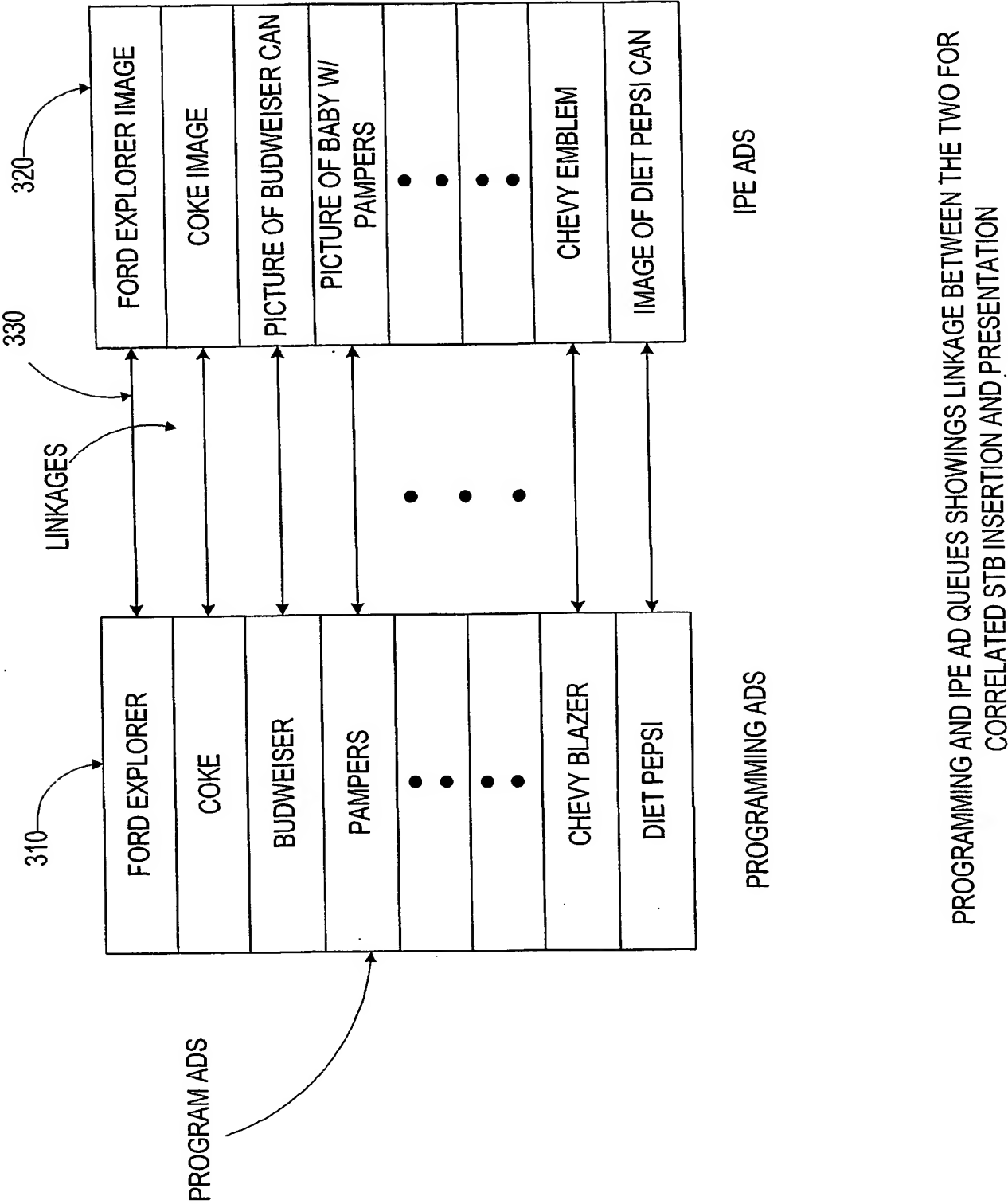
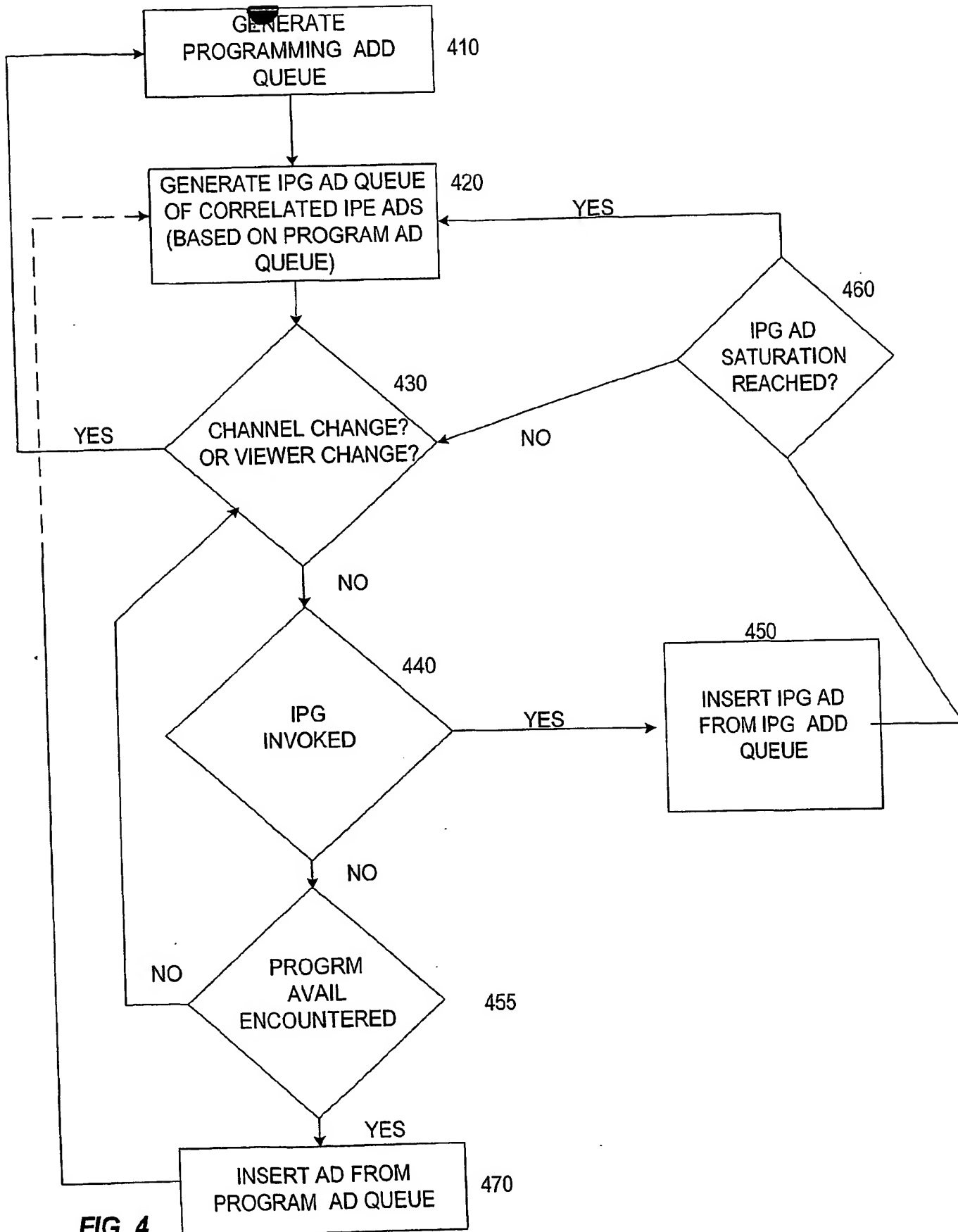


FIG. 3





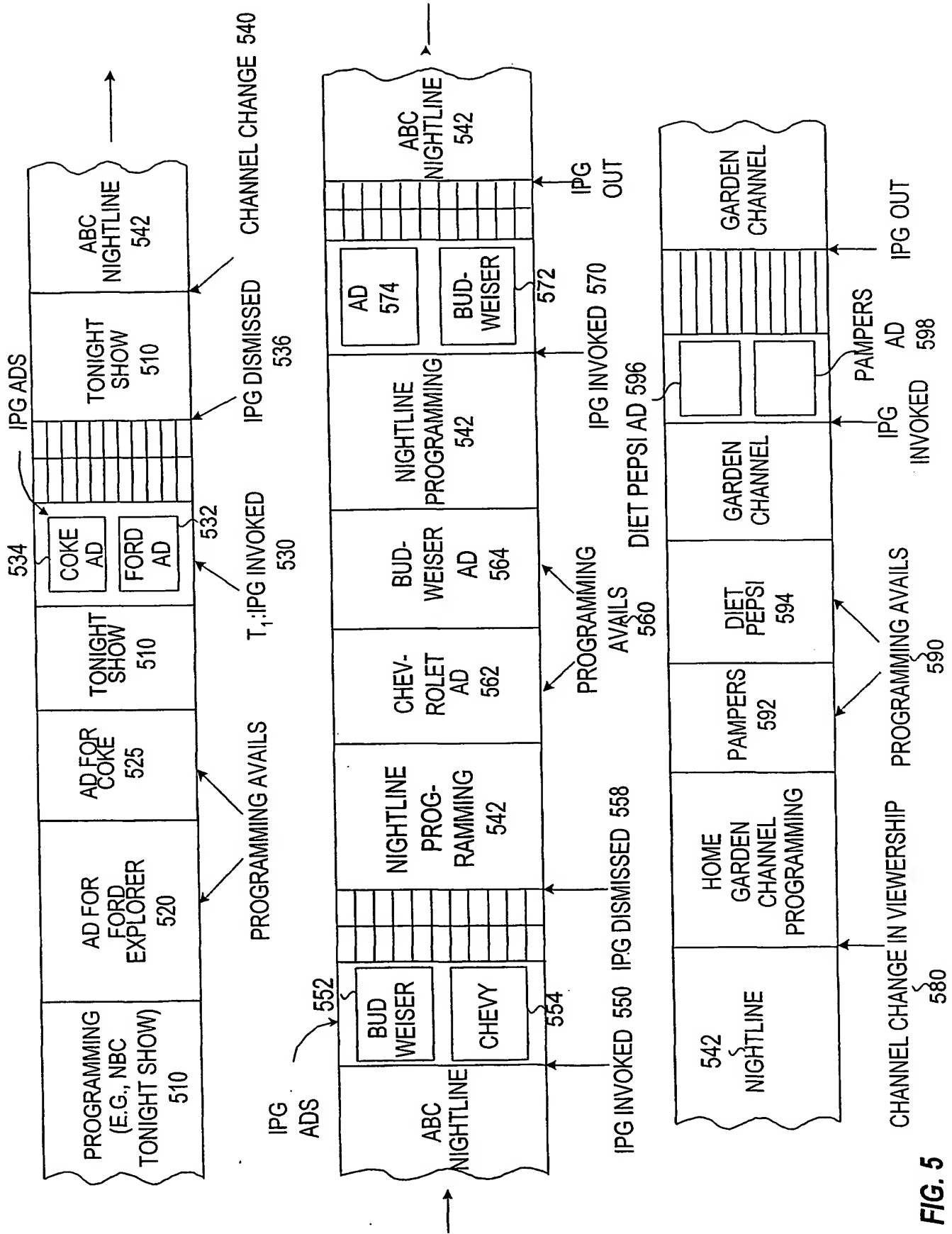


FIG. 5

## INTERNATIONAL SEARCH REPORT

International Application No.  
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## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H04N 5/445; G06F 3/00, 13/00

US CL : 725/46, 45, 44, 43, 42, 40, 39, 51

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 725/46, 45, 44, 43, 42, 40, 39, 51

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
NONEElectronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
EAST - ad, advertisement, target, display, IPG, EPG, profile

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,635,978 A (ALTEN et al) 03 June 1997, whole document	1-27
X, P	US 6,177,931 B1 (ALEXANDER et al) 23 January 2001, whole document	1-27
A	US 5,600,364 A (HENDRICKS et al) 04 February 1997, whole document	1-27
A	US 5,758,259 A (LAWLER) 26 May 1998, whole document	1-27



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier document published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
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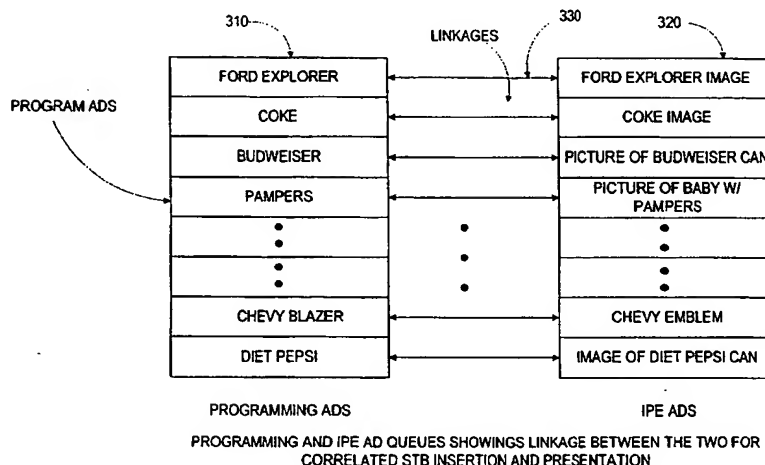
(75) Inventors/Applicants (*for US only*): **ELDERING, Charles, A.** [US/US]; P.O. Box 272, Doylestown, PA

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[Continued on next page]

(54) Title: TARGETING ADS IN IPGS, LIVE PROGRAMMING AND RECORDED PROGRAMMING, AND COORDINATING THE ADS THEREBETWEEN



(57) Abstract: Targeting ads to subscribers by comparing subscriber profiles with ad profiles. The system can be implemented on any delivery platform (i.e., SDV, HFC, DBS). The ads may be displayed to the subscriber within an IPG, within available in programming, or both. The targeting of ads in the two media can include linkages (330), IPG ads (320) in IPG prior to or after programming ads (310) for highly effective advertising campaigns. An ad queue may be used to determine the order in which ads are placed in the IPG, programming, or both. The ads and the ad queue may be stored upstream (i.e., HE or CO), at the subscriber side (i.e., STB), or some combination thereof. The ads may be substituted at the HE/CO of the STB. The STB may receive the targeted ads with the programming and/or IPG, on an ad channel, or via the Internet. The ads may be delivered to individual subscribers (i.e., STB) or to groups or subscribers (i.e., node).

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WO 02/030112 A1



— with amended claims

**Date of publication of the amended claims:** 25 July 2002

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**AMENDED CLAIMS**

[received by the International Bureau on 10 January 2002 (10.01.02);  
new claims 28-74 added; remaining claims unchanged (12 pages)]

28. A method for coordinating display of programming advertisements with display of other types of advertisements, the method comprising:

5 linking at least one of the programming advertisements to at least one of the other types of advertisements;

monitoring the display of the programming advertisements;

detecting availability of advertisement opportunities for the other types of advertisements;

10 determining when a linked other type of advertisement is available for the advertisement opportunity based on said linking, said monitoring and said detecting; and displaying the linked other type of advertisement in the advertisement opportunity.

29. The method of claim 28, wherein the other types of advertisements are IPG  
15 advertisements.

30. The method of claim 29, wherein said detecting includes detecting activation of an IPG, the IPG having advertisement opportunities therein.

20 31. The method of claim 30, wherein said determining includes determining what programming advertisements were displayed prior to activation of the IPG.

32. The method of claim 31, wherein said determining further includes determining if there are any IPG advertisements linked to the programming advertisements displayed prior to activation of the IPG.

5 33. The method of claim 30, wherein said determining includes determining what programming advertisements are scheduled to be displayed when the IPG is activated.

34. The method of claim 33, wherein said determining further includes determining if there are any IPG advertisements linked to the programming advertisements  
10 scheduled to be displayed.

35. The method of claim 28, wherein said monitoring includes monitoring the programming advertisements that are scheduled to be displayed.

15 36. The method of claim 28, wherein said linking includes linking the programming advertisements for a particular product or service with the other types of advertisements for the particular product or service.

37. The method of claim 28, wherein said linking includes linking the  
20 programming advertisements for a particular companies product or service with the other types of advertisements for the particular company.

38. The method of claim 28, wherein said linking includes linking the programming advertisements for a particular company, product or service with the other types of advertisements for related companies, products or services.

5 39. The method of claim 28, wherein said linking includes linking the programming advertisements for a particular company, product or service with the other types of advertisements for competitive companies, products or services.

40. The method of claim 28, further comprising  
10 maintaining a first advertisement queue for the programming advertisements; and  
maintaining a second advertisement queue for the other types of advertisements,  
wherein the first and the second advertisement queues are linked together.

41. The method of claim 28, wherein said linking includes linking one to one,  
15 many to one, or one to many.

42. The method of claim 28, wherein the other type of advertisements are advertisements in recorded programming.

20 43. The method of claim 42, wherein said detecting includes detecting initiation of a record command and detecting the advertisement opportunities within programming being recorded.

44. The method of claim 43, wherein said linking includes linking the programming advertisements with the advertisements in recorded programming as the programming is being recorded.

5

45. The method of claim 43, wherein said linking includes linking the programming advertisements with the advertisements in recorded programming as the recorded programming is being played back.

10 46. The method of claim 28, wherein the other type of advertisements include IPG advertisements and advertisements in recorded programming.

47. The method of claim 46, wherein the advertisements in recorded programming is advertisements recorded in programming, advertisements displayed when  
15 recorded programming is played back, or both.

48. The method of claim 28, wherein at least some subset of the programming advertisements and the other types of advertisements are targeted advertisements.

20 49. The method of claim 48, wherein the targeted advertisements are targeted based on correlating intended target market traits with traits associated with at least some subset of node, cluster of nodes, household, group of households, subscribers, or group of subscribers.



50. A system for coordinating display of programming advertisements with display of other types of advertisements, the system comprising:

means for linking at least one of the programming advertisements to at least one of

5 the other types of advertisements;

means for monitoring the display of the programming advertisements;

means for detecting availability of advertisement opportunities for the other types of advertisements;

means for determining when a linked other type of advertisement is available for the  
10 advertisement opportunity responsive to said means for linking, said means for monitoring and said means for detecting; and

means for displaying the linked other type of advertisement in the advertisement opportunity.

15 51. The system of claim 50, wherein said means for detecting detects IPG advertisement opportunities when an IPG is activated.

52. The system of claim 51, wherein said means for determining determines IPG advertisements linked to at least some subset of:

20 the programming advertisements displayed prior to activation of the IPG; and

the programming advertisements scheduled to be displayed.

53. The system of claim 50, wherein said means for linking links at least some subset of:

the programming advertisements for a particular product or service with the other types of advertisements for the particular product or service;

5 the programming advertisements for a particular companies product or service with the other types of advertisements for the particular company;

the programming advertisements for a particular company, product or service with the other types of advertisements for related companies, products or services; and

10 the programming advertisements for a particular company, product or service with the other types of advertisements for competitive companies, products or services.

54. The system of claim 50, wherein said means for detecting detects advertisement opportunities within programming being recorded upon initiation of recording.

15 55. The system of claim 54, wherein said means for determining determines recorded advertisements linked to at least some subset of:

the programming advertisements displayed prior to activation of the recording; and

the programming advertisements scheduled to be displayed.

20 56. The system of claim 50, wherein said means for detecting detects advertisement opportunities within recorded programming being viewed upon initiation of playback of the recorded programming.

57. The system of claim 56, wherein said means for determining determines recorded advertisements linked to at least some subset of:

the programming advertisements displayed prior to activation of the playback; and

5 the programming advertisements scheduled to be displayed.

58. The system of claim 50, further comprising

means for selecting targeted advertisements; and

means for displaying the targeted advertisements.

10

59. A computer program embodied on a computer readable medium for coordinating display of programming advertisements with display of other types of advertisements, the computer program comprising:

15 a source code segment for linking at least one of the programming advertisements to at least one of the other types of advertisements;

a source code segment for monitoring the display of the programming advertisements;

a source code segment for detecting availability of advertisement opportunities for the other types of advertisements;

20 a source code segment for determining when a linked other type of advertisement is available for the advertisement opportunity responsive to said means for linking, said means for monitoring and said means for detecting; and

a source code segment for displaying the linked other type of advertisement in the advertisement opportunity.

60. A method for managing presentation of programming advertisements and  
5 other advertisements, the method comprising:
- maintaining a first queue defining a sequence for display of the programming advertisements;
  - maintaining a second queue defining a sequence for display of the other  
advertisements, wherein at least one of the other advertisements defined in the second queue  
10 is linked to at least one of the programming advertisements defined in the first queue;
  - detecting programming advertisement opportunities;
  - displaying the programming advertisements in the programming advertisement opportunities in the sequence defined in the first queue;
  - detecting other advertisement opportunities; and  
15 displaying the other advertisements in the programming advertisement opportunities in the sequence defined in the second queue.

61. The method of claim 60, wherein the first queue is updated based on a change to at least some subset of channel, viewership, program, genre, or time.

62. The method of claim 60, wherein the second queue is updated so that at least a subset of the other advertisements defined in the second queue are in sync with at least a subset of the programming advertisements defined in the first queue.

5 63. The method of claim 60, wherein the other advertisements are IPG advertisements.

64. The method of claim 63, wherein said detecting includes detecting initiation of an IPG and IPG advertisement opportunities available therein.

10 65. The method of claim 63, wherein the IPG advertisements displayed are linked to the programming advertisements that were just displayed or that are scheduled to be displayed in the near future.

15 66. The method of claim 60, wherein the other advertisements are advertisements in recorded programming.

67. The method of claim 66, wherein said detecting includes detecting recording advertisement opportunities available when programming is being recorded.

20 68. The method of claim 66, wherein said detecting includes detecting recording advertisement opportunities available when recorded programming is being played back.

69. The method of claim 60, wherein at least some subset of the programming advertisements and the other advertisements are targeted advertisements.

5 70. The method of claim 60, wherein the link between at least one of the other advertisements defined in the second queue and at least one of the programming advertisements defined in the first queue includes at least some subset of:

the programming advertisements for a particular product or service with the other types of advertisements for the particular product or service;

10 the programming advertisements for a particular companies product or service with the other types of advertisements for the particular company;

the programming advertisements for a particular company, product or service with the other types of advertisements for related companies, products or services; and

15 the programming advertisements for a particular company, product or service with the other types of advertisements for competitive companies, products or services.

71. A computer program embodied on a computer readable medium for managing presentation of programming advertisements and other advertisements, the computer program comprising:

20 a source code segment for maintaining a first queue defining a sequence for display of the programming advertisements;

a source code segment for maintaining a second queue defining a sequence for display of the other advertisements, wherein at least one of the other advertisements defined

in the second queue is linked to at least one of the programming advertisements defined in the first queue;

a source code segment for detecting programming advertisement opportunities;

a source code segment for displaying the programming advertisements in the  
5 programming advertisement opportunities in the sequence defined in the first queue;

a source code segment for detecting other advertisement opportunities; and

a source code segment for displaying the other advertisements in the programming advertisement opportunities in the sequence defined in the second queue.

10 72. The computer program of claim 71, wherein said source code segment for maintaining a first queue updates the first queue based on a change to at least some subset of channel, viewership, program, genre, or time.

15 73. The computer program of claim 71, wherein said source code segment for maintaining a second queue updates the second queue so that at least a subset of the other advertisements defined therein are in sync with at least a subset of the programming advertisements defined in the first queue.

20 74. A system for managing presentation of programming advertisements and other advertisements, the system comprising:

means for maintaining a first queue defining a sequence for display of the programming advertisements;

means for maintaining a second queue defining a sequence for display of the other advertisements, wherein at least one of the other advertisements defined in the second queue is linked to at least one of the programming advertisements defined in the first queue;

means for detecting programming advertisement opportunities;

5 means for displaying the programming advertisements in the programming advertisement opportunities in the sequence defined in the first queue;

means for detecting other advertisement opportunities; and

means for displaying the other advertisements in the programming advertisement opportunities in the sequence defined in the second queue.

10